





# Convention on Biological Diversity

Distr. GENERAL

UNEP/CBD/SBSTTA/20/INF/26 14 April 2016

**ENGLISH ONLY** 

SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE Twentieth meeting Montreal, Canada, 25-30 April 2016 Item 4.2 of the provisional agenda\*

### REPORT OF THE EXPERT MEETING FOR BIODIVERSITY AND ACIDIFICATION IN COLD-WATER AREAS

Note by the Executive Secretary

- 1. Pursuant to the request by the Conference of the Parties to the Convention on Biological Diversity, in paragraph 16 of decision XII/23, the CBD Secretariat prepared, in collaboration with Parties, other Governments and relevant organizations, a draft specific workplan on biodiversity and acidification in cold-water areas, as contained in document UNEP/CBD/SBSTTA/20/4, as well as a background document (UNEP/CBD/SBSTTA/20/INF/25).
- 2. In order to further facilitate scientific and technical inputs to the discussions of the Subsidiary Body on the development of a specific workplan on biodiversity and acidification in cold-water areas, the CBD Secretariat, together with the Secretariat of the Global Ocean Biodiversity Initiative, convened, with the financial resources from the European Commission, the Expert Meeting for Biodiversity and Acidification in Cold-Water Areas in New York, United States of America, on 2 April 2016. The report of the meeting is made available below as information for the Subsidiary Body.

<sup>\*</sup> UNEP/CBD/SBSTTA/20/1/Rev1.

#### REPORT OF THE EXPERT MEETING FOR BIODIVERSITY AND ACIDIFICATION IN COLD-WATER AREAS

## Convened by the Secretariat of the Convention on Biological Diversity and the Secretariat of the Global Ocean Biodiversity Initiative 2 April 2016, New York, USA

#### **INTRODUCTION**

Pursuant to the request by the Conference of the Parties to the CBD in paragraph 16 of decision XII/23, the CBD Secretariat prepared, in collaboration with Parties, other Governments and relevant organizations, a draft specific workplan on biodiversity and acidification in cold-water areas, building upon the elements of a workplan on physical degradation and destruction of coral reefs, including cold-water corals and in close linkage with relevant work under the Convention, such as the description of areas meeting the scientific criteria for ecologically or biologically significant marine areas, and with relevant work of competent organizations, such as the Food and Agriculture Organization of the United Nations for its work on vulnerable marine ecosystems (VMEs), which will be submitted to the Subsidiary Body of Scientific, Technical and Technological Advice (SBSTTA) of the Convention at its twentieth meeting. This draft specific workplan is available in document UNEP/CBD/SBSTTA/20/4. The Executive Secretary also prepared an information document to provide background to inform the discussions of the Subsidiary Body on the development of a specific workplan on biodiversity and acidification in cold-water areas.

As inputs to the discussions of the Subsidiary Body on the development of a specific workplan on biodiversity and acidification in cold-water areas, the CBD Secretariat, together with the Secretariat of the Global Ocean Biodiversity Initiative, convened the Expert Meeting for Biodiversity and Acidification in Cold-Water Areas on 2 April 2016 in New York, USA. The organization of this meeting was supported by the financial resources from the European Commission. The meeting was attended by experts with expertise and experience in science or policy-related aspects of biodiversity and acidification in cold-water areas. This list of participants is provided in annex I.

The purpose of the meeting was to (i) discuss the state of knowledge regarding biodiversity and acidification in cold-water areas and relevant policy and management approaches (in the context of the above-mentioned background document, and (ii) discuss the elements of the draft specific workplan. The meeting programme is provided in annex II.

### 1. OPENING OF THE MEETING AND INTRODUCTORY PRESENTATIONS

Mr. David Johnson (Global Ocean Biodiversity Initiative) welcomed participants to the meeting, and explained that this meeting, although not a formal CBD workshop, provides a valuable opportunity for informal substantive discussion on this topic to be considered by the forthcoming meeting of SBSTTA. He noted that cold-water areas in the deep-sea and open ocean support ecologically important habitat including cold-water corals and sponge fields, rich communities or organisms and also play important functional roles for various fish species, but that these ecosystems are facing growing pressures from large-scale changes such as ocean acidification, and unsustainable activities such as destructive fishing practices and pollution from shipping, among others. He noted that the meeting provided an important opportunity to discuss the elements of the draft workplan and provide insights and considerations that could be useful to the SBSTTA in its consideration on this topic. He then invited meeting participants for a round of self-introductions to briefly outline their interest and experience with regards to biodiversity and acidification in cold-water areas.

Ms. Jihyun Lee (Secretariat of the Convention on Biological Diversity), also welcomed the meeting participants and thanked them for their time and valuable input. She acknowledged financial support from the European Commission for this meeting, and thanked the GOBI Secretariat and contributing

colleagues for their input and assistance in preparing background documentation and meeting logistics.

Mr. Joseph Appiott (Secretariat of the Convention on Biological Diversity) provided the context for the meeting. He reminded the participants that the work under the CBD aims to support Parties in their efforts to achieve the vision of the Strategic Plan for Biodiversity 2011-2020 and its 20 Aichi Biodiversity Targets. He reviewed the previous work under the CBD on ocean acidification, including the production of CBD Technical Series No. 46 (2009): Scientific Synthesis of the Impacts of Ocean Acidification on Marine Biodiversity, the CBD Expert Meeting to Develop a Series of Joint Expert Review Processes to Monitor and Assess the Impacts of Ocean Acidification on Marine and Coastal Biodiversity (2011) and the production of CBD Technical Series 75 (2014): An Updated Synthesis of the Impacts of Ocean Acidification on Marine Biodiversity. He also discussed the Priority Actions to Achieve Aichi Biodiversity Target 10 for Coral Reefs and Closely Associated Ecosystems, which were adopted by the Conference of the Parties at its twelfth meeting in 2014. The Priority Actions focus on actions that reduce the impacts of multiple stressors, enhance the resilience of coral reefs and closely associated ecosystems, maintain sustainable livelihoods and food security in reef-dependent coastal communities and increase the capability of managers to forecast and plan proactively for climate risks and secondary effects. He described the call from decision XII/23 to prepare a draft workplan for biodiversity and acidification in cold-water areas, building on the previous and ongoing relevant work under the Convention.

Mr. Murray Roberts (Heriot-Watt University) provided an overview of the status and trends related to biodiversity and acidification in cold-water areas as presented in the background document, highlighting aspects of existing knowledge on ocean acidification and its impacts on marine biodiversity in cold-water areas, the implications of other stressors and relevant knowledge gaps. The outlined that biodiversity and habitats in the deep ocean are vulnerable to a range of stressors, most of which are anthropogenic in nature, including potential stressors from destructive fishing practices, deep-sea mining, pollution, ocean acidification, ocean warming and dexoygenation. He emphasized that the impacts of multiple stressors, their interactions and potentially cumulative and multiple effects are not yet well understood. He noted that the oceans absorb nearly 30% of all manmade CO<sub>2</sub> emissions, and that increased atmospheric CO<sub>2</sub> is resulting in increased ocean acidity and other related effects on ocean chemistry. He stressed that ocean acidification is intensifying rapidly and in an unprecedented manner, with acidity levels increasing at least ten times faster than at any other time in the past 65 million years and that ocean acidity is predicted to increase to 100 to 150% of today's levels by 2100. He emphasized that the areas most at risk from the impacts of ocean acidification are regions that are home to deep-water coral reefs of Lophelia pertusa, which form important habitats (e.g., nursery and feeding grounds) for other species, and that other fauna particularly at risk include sponges, a range of pelagic species, and soft sediment communities, and that impacts of ocean acidification are already detectable in pteropods, which play an important role in the food chain.

Ms. Marjo Vierros (United Nations University) presented an analysis of existing policy and management responses to identified and potential threats at the global, regional and national levels as presented in the background document. She discussed the context and policy approaches for addressing threats to biodiversity and ecosystems in cold-water areas. She reviewed some examples of national activities to address sectoral stressors, including closures of vulnerable habitats to potentially harmful activities, bycatch limits and encounter protocols for corals and sponges, mapping and modelling of cold water areas and evaluating risk to these areas and pollution reduction. She also reviewed examples of national activities to address multiple stressors, including expanding the use of area-based management tools (including marine protected areas), minimizing other anthropogenic stressors to allow biodiversity to adapt to changes, identifying and protecting areas that may be most resilient to impacts of climate change, mapping spatial interactions between known and predicted cold-water coral reef distribution, the predicted impacts of acidification, and

Page 4

areas subjected to anthropogenic stressors, identifying and protecting refugia, identifying and prioritizing for protection cold-water coral communities above the aragonite saturation horizon and protecting representative habitats. She noted that many sectoral policies and activities could benefit from strengthening and incorporating climate change impacts, and that management of multiple stressors in an integrated way in the context of the ecosystem approach is needed. She also emphasized that the scientific information synthesized through the processes for ecologically and biologically significance marine areas (EBSAs) and vulnerable marine ecosystems (VMEs) are useful in supporting this work. She also noted that cold-water biodiversity supports economies and well-being, and thus all stakeholders have a role in its management, emphasizing the need for awareness-raising and capacity development.

A question and answer session followed these presentations.

### 2. DISCUSSION ON ELEMENTS OF THE DRAFT SPECIFIC WORKPLAN ON BIODIVERSITY AND ACIDIFICATION IN COLD-WATER AREAS

Ms. Vierros then reviewed the main sections of the draft specific workplan as contained in UNEP/CBD/SBSTTA/20/4. The meeting then discussed and provided input on the actions under section 5 of the draft specific workplan. Due to time limitations, the meeting was only able to address the actions under section 5 of the draft specific workplan. Section 5 includes actions under the following categories:

- Assess needs and develop integrated policies, strategies and programmes related to biodiversity and acidification in cold-water areas;
- Strengthen existing sectoral and cross-sectoral management to address stressors to cold water biodiversity, including from overfishing and destructive fishing practices, pollution, shipping, seabed mining;
- Develop and apply marine protected areas and marine spatial planning in order to reduce the impacts of multiple stressors on cold-water biodiversity in the context of the ecosystem approach and national development planning;
- Expand and improve monitoring and research on biodiversity in cold-water areas to fill in gaps in fundamental knowledge of species identification, species distribution, and community composition, etc. (further details provided in annex III of UNEP/CBD/SBSTTA/20/4);
- Improve coordination and collaboration in research, information sharing and capacity building to address policy and management needs, and to increase public awareness;
   and
- Identify and provide sustainable sources of financing to enable the actions outlined in this workplan.

The comments that emerged during the discussion on section 5 are provided in annex III.

The meeting participants also provided a number of general points with regards to the draft specific workplan.

They noted the need to more clearly define what is meant by "cold water areas". They noted that the following scope was provided in UNEP/CBD/SBSTTA/20/4:

The geographical scope of the work encompassed cold-water areas in the deep and open ocean, and included both benthic and pelagic biodiversity. In regards to the benthos, this work considered ecosystems and species present in the deep seafloor (below 200-300m) as well as those in deeper shelf areas. Purely coastal ecosystems and species are considered to be outside the scope of this study. The work did not cover the polar seas."

However, the participants also noted that this scope would benefit from more clarity, including with regards to temperature. This could avoid confusion regarding the geographic applicability of the specific workplan. For example, the scope of the workplan also includes deep-water areas in tropical

areas (where water depth and temperature change can rapidly offshore), although the term "cold-water areas" may not give this impression.

The meeting participants also noted that one of the key actions to mitigate pressures on biodiversity in cold-water areas is to reduce emissions of greenhouse gases, but that actions in this regard are discussed under the auspices of the UN Framework Convention on Climate Change (UNFCCC). The group also noted, however, that future carbon sequestration activities could adversely impact biodiversity and ecosystems in deep-water areas.

The meeting also noted the need to scale down to the regional, sub-regional and national levels and to contextualize the issue to the concerns and needs of developing countries, in light of the notable capacity gaps to effectively conduct research and management in cold-water areas. The meeting noted related efforts such as work under UNEP to downscale global climate change models to the regional level for use by Regional Seas Conventions and Action Plans.

The meeting also noted the value in identifying the time frames in which the various actions in the workplan would need to be addressed, as this would support prioritization in a resource-limited context.

The meeting also discussed the concept of resilience, suggesting that enhancing resilience first requires an understanding of what properties or features give any ecosystem resilience, rather than focusing on which parts of the system are susceptible to impacts. It was noted that further clarity was required on determining "resilience to what?" and to distinguish between the resilience of ecosystems, the resilience of species, and the resilience of people using ecosystem services.

### 3. BREAKOUT GROUPS ON CONSIDERATIONS RELATED TO POTENTIAL FUTURE IMPLEMENTATION

The meeting participants then split into breakout groups to discuss thematic aspects to be taken into consideration in the implementation of the draft specific workplan, noting that the draft workplan had not yet been considered by SBSTTA or COP. Participants split into three groups to discuss: i) strategic issues; ii) scientific issues; and iii) capacity-related issues.

### Strategic issues

The group considered whether it was best to title the document as a "workplan", as it is more of a series of activities that need to be undertaken in order to deliver on existing commitments. The group noted that a solution may be to include text in the preamble that differentiates between activities that are already taking place and those that need to be considered. The group suggested that activities could fall into one of three different categories: (i) activities that are underway; (ii) contributory activities, and (iii) a set of activities not yet taking place. The group emphasised the need to link the draft specific workplan to processes already endorsed by Parties, such as the World Ocean Assessment and assessments being undertaken by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Intergovernmental Panel on Climate Change (IPCC). In this context, the workplan should emphasise the need for increased attention on issues related to biodiversity and acidification in cold-water areas. The group recognised an opportunity to link with work under the CBD EBSA process. It also noted that CBD has a role to integrate activities described in the workplan with other competent organisations and to facilitate interactions between sectoral agencies. Finally, the group identified the importance of building links to scientific and monitoring processes where significant investment has already been made, for example Large Marine Ecosystem (LME) projects and the Ocean Biogeographic Information System (OBIS), the Global Ocean Observing System (GOOS) and Group on Earth Observations Biodiversity Observation Network (GEOBON), and making use of other key information sources such as traditional knowledge and data from the private sector.

### Scientific issues

The group considered ways in which to facilitate monitoring and maximise cost efficiencies, recognising the important habitats, rich communities and important functional roles of these areas – for example, use of ships of opportunity. The group underlined the importance of standardised environmental variables and associated species data, centralised repositories such as the Ocean Biogeographic Information System (OBIS), relevant sea basin-scale projects such as the EU-funded ATLAS programme, and other ocean acidification monitoring efforts worldwide. The group stressed the importance of the science-policy interface, including opportunities such as the forthcoming high-level UN Conference on Oceans and Seas, (Fiji, June 2017), and to find a balance between managing resources of the deep-sea without unnecessarily impeding scientific research. The group also stressed the need for activities in the workplan to be embedded in global research programmes with adequate support for developing countries.

### Capacity-related issues

The group felt that there are notable capacity gaps to carry out many of the actions in draft workplan. They noted that the need to emphasize how the elements of workplan contribute to the achievement of the Sustainable Development Goals and also how they tie into the national development strategies and development priorities of specific countries. The group noted that the need to demonstrate how improved knowledge and management of biodiversity in cold-water areas can support sustainable economic growth in order to can facilitate access to opportunities to address capacity gaps. The group identified the need to link the workplan to initiatives that have secured funding and to consider how to utilize public-private partnerships. The group stressed consideration of public-private partnerships and the negotiation of data-sharing agreements. It also noted that having a sense of the urgency of different actions within the workplan (i.e., which actions are needed immediately) can support Parties in prioritization in a resource-limited context.

#### 4. MEETING SUMMARY AND CONCLUSION

Mr. Johnson concluded the meeting with a brief summary of the day's discussions. He noted that the work on biodiversity and acidification in cold-water areas was an important topic under the CBD, as called for the Conference of the Parties. He noted the meetings discussions on the need for the scientific implications from growing pressures related to large-scale changes to be addressed despite significant uncertainties. He also noted the discussions on existing strategies and practices, including area-based approaches to address these pressures at different temporal and spatial scales. He referred to the discussions on distinguishing planning from management, identifying precautionary actions and monitoring and research priorities. The meeting had also recognised a number of scientific gaps such as the lack of good environmental predictive studies in deep-water areas. He cited the meeting's discussions on the need to accelerate the rate of learning in order to tackle these issues, supported by technology development to both reduce costs and expand the feasible range of deep-sea research. He also noted the need to clearly link issues related to biodiversity and acidification in cold-water areas to the Sustainable Development Goals and sustainable development strategies at the national-level.

The CBD Secretariat informed the meeting participants that the results of the meeting discussions would inform the deliberations of SBSTTA on the draft specific workplan. The Secretariat also noted that the background document would be further revised following SBSTTA, taking into consideration input received during the meeting as well as during the twentieth meeting of SBSTTA. The Secretariat also noted that this topic would be discussed during at the twentieth meeting of SBSTTA, where the results of the meeting discussions would also be presented.

Mr. Johnson closed the meeting by thanking all participants for their time and input.

### Annex I MEETING PARTICIPANTS

Name	Affiliation	
Appiott, Joseph	Secretariat of the Convention on Biological Diversity	
Brierley, Elizabeth	Pacific Island Forum Secretariat	
Burton, Geoff	United Nations University	
Davetanivalu, Jope	Secretariat of the Pacific Regional Environment Programme	
Diz, Daniela	University of Edinburgh	
Dunn, Daniel	Duke University	
Fuller, Susanna	Ecology Action Center	
Georgian, Sam	Temple University	
Gjerde, Kristina	IUCN	
Graham, Alistair	WWF International	
Gunn, Vikki	Global Ocean Biodiversity Initiative	
Jamieson, Alan	University of Aberdeen	
Johnson, David	Global Ocean Biodiversity Initiative	
Kenchington, Ellen	Department of Fisheries and Oceans, Canada	
Lee, Jihyun	Secretariat of the Convention on Biological Diversity	
Manoni, Filimon	Pacific Islands Forum Fisheries Agency	
Nakamura, Takehiro	United Nations Environment Programme (UNEP)	
Rice, Jake	Independent consultant	
Roberts, J. Murray (remote participation)	Heriot-Watt University	
Tandstad, Merete	Food and Agriculture Organization of the UN (FAO)	
Vierros, Marjo	United Nations University	

## Annex II MEETING AGENDA

08:30 - 9:00	Introduction and context of the meeting  by Mr David Johnson (Global Ocean Biodiversity Initiative) (meeting Chair) and Mr. Joseph Appiott (CBD Secretariat)		
09:00 - 09:30	Presentation of the main findings of the background document and the draft specific workplan  by Mr. Murray Roberts (Heriot-Watt University) and Ms.  Marjo Vierros (United Nations University)		
09:30 - 12:30	Session 1 - Discussions on elements of the draft specific workplan  • Policies, strategies and programmes  • Sectoral approaches  • Area-based management approaches  • Monitoring and research needs  • Enabling implementation:  Coordination and collaboration, financing, outreach		
12:30 – 13:30	Lunch		
13:30 – 15:00	Session 1 continued  Session 2 - Future Steps and Summary:		
	<ul> <li>Potential opportunities to facilitate implementation of the elements of the workplan</li> <li>Summary of the meeting discussion by the Chair</li> </ul>		
15:00	Closure of the meeting		

 ${\it Annex~III}$  COMMENTS ON THE DRAFT SPECIFIC WORKPLAN ON BIODIVERSITY AND ACIDIFICATION IN COLD-WATER AREAS $^1$ 

Section of draft specific workplan		Comments from meeting participants	
5.1	Assess needs and develop integrated policies, strategies and programmes related to biodiversity and acidification in cold-water areas	<ul> <li>A potential future description of the properties of ecosystems and their associated vulnerability would help Parties in implementing actions under this sub-section. This should consolidate and build on existing knowledge.</li> <li>Actions in this sub-section tie into mainstreaming biodiversity and could be cross-referenced to other areas of work under the CBD.</li> <li>Although 5.1(c) specifically highlights cold-water corals and associated ecosystems, it would also be appropriate to give equal weight to a range of key habitats, including soft sediment communities.</li> </ul>	
5.2	Strengthen existing sectoral and cross-sectoral management to address stressors to cold-water biodiversity, including from overfishing and destructive fishing practices, pollution, shipping, seabed mining	<ul> <li>The fisheries-related elements of 5.2(a), (b) and (c) could be brought together.</li> <li>After the points on sectoral stressors, a point could be included at the end to emphasize areas where cross-sectoral management is needed, namely in vulnerable ecosystems and ecologically important cold-water habitats, including ecologically or biologically significant marine areas (EBSAs).</li> <li>5.2 (g) could include other types of habitats in addition to cold-water corals and sponge reefs.</li> <li>The sub-section could also address species in the water column (e.g., sharks).</li> <li>This sub-section could include reference to threat/risk assessment to identify where specific threats occur and how they affect different components of biodiversity and ecosystems.</li> <li>Deoxygenation could be added to 5.2(c) as an important stressor.</li> </ul>	

<sup>&</sup>lt;sup>1</sup> As contained in annex II of UNEP/CBD/SBSTTA/20/4

		5.2(g) could also refer to long-term research and monitoring sites.
5.3	Develop and apply marine protected areas and marine spatial planning in order to reduce the impacts of multiple stressors on cold-water biodiversity in the context of the ecosystem approach and national development planning	<ul> <li>This sub-section could include reference to other types of area-based management tools in addition to marine protected areas.</li> <li>This sub-section could benefit by being re-organized into two categories: (i) actions related to marine spatial planning and (ii) actions related to the use of area-based management tools (including marine protected areas).</li> <li>This sub-section could highlight the use of networks of MPAs.</li> <li>It is important to identify populations and genetic variants that might be resilient to changing conditions (e.g., certain species of framework coral), in addition to habitats.</li> <li>It is recommended to separate ecologically or biologically significant marine areas (EBSAs) from vulnerable marine ecosystems (VMEs) and particularly sensitive sea areas (PSSAs), as EBSAs do not entail management prescriptions or responses to specific threats.</li> </ul>
5.4	Expand and improve monitoring and research on biodiversity in cold-water areas to fill in gaps in fundamental knowledge of species identification, species distribution, and community composition, etc. (further details provided in annex III of UNEP/CBD/SBSTTA/20/4)	<ul> <li>There is a need for research to better identify and understand the factors that contribute to resilience of biodiversity in cold-water areas, and to better understand how these specific factors are affected by different pressures.</li> <li>There is a need to be more explicit about what parameters need to be measured and monitored – for example, seawater pH.</li> <li>There is a need for a better understanding of patch dynamics in deep-sea ecosystems.</li> <li>5.4(c) could also emphasize the need for reliable environmental predictors to inform the use of predictive models, as there is currently a lack of reliable environmental predictors for depths below 2000m.</li> <li>There is a need for further research on societal values associated with the services provided by biodiversity and ecosystems in cold-water areas, including ecosystem services related to deep pelagic ecosystems.</li> </ul>

		<ul> <li>There is a need for capacity development to better enable developing countries to address the various monitoring and research needs, including access to knowledge, technology transfer and the development of specialized skills (e.g., taxonomy).</li> <li>This sub-section could stress the importance of providing access to research and data both within the scientific community and in collaboration with industry, acknowledging that capacity levels to address the actions in this workplan are highly variable.</li> <li>Monitoring and research should also inform an understanding of what types of management tools have shown to be effective and what types of information is needed to support implementation of these tools.</li> </ul>
5.5	Improve coordination and collaboration in research, information sharing and capacity-building to address policy and management needs, and to increase public awareness	<ul> <li>This sub-section could emphasize the need to accelerate our rate of learning, including through technology development, in order to address the actions in the workplan.</li> <li>This sub-section could also emphasize the need for coordination and collaboration at the national and sub-national levels within governments.</li> <li>5.5(b) could include specific reference to databases that already provide input to various areas of work under the CBD, in particular the Ocean Biogeographic Information System (OBIS), the Global Ocean Observing System (GOOS) and Group on Earth Observations Biodiversity Observation Network (GEOBON).</li> <li>5.5(c) could be broadened to specifically note the importance of knowledge-sharing among sectors, including in the private sector.</li> </ul>
5.6	Identify and provide sustainable sources of financing to enable the actions outlined in this workplan	<ul> <li>This sub-section could include reference to the SDGs to demonstrate relevance to broader sustainable development issues.</li> <li>5.6 (c) could include specific examples of such bottlenecks, as this would support Parties and relevant organizations in addressing such challenges and enhancing capacity.</li> </ul>

\_\_\_\_\_